WHAT IS CLAIMED IS:

1. A sputtering method for forming a film on a substrate in a film forming space while monitoring emission intensity of plasma, the method comprising the steps of:

detecting a thickness of the film formed on said substrate;

comparing a detected value with a preset value of the film thickness; and

deciding a target value of the emission intensity in accordance with a compared result.

2. A sputtering method according to Claim 1, wherein a flow rate of at least one of gases introduced to said film forming space is controlled such that actual emission intensity is adjusted at the target value of the emission intensity.

3. A sputtering method according to Claim 1, wherein a target containing In is employed as a sputtering target.

4. A sputtering method according to Claim 1, wherein a cylindrical rotating target is employed as a sputtering target.

5. A sputtering method according to Claim 2, wherein an oxygen gas is selected as one of the gases, of which flow rate is controlled.

6. A sputtering method according to Claim 1, wherein the target value of the emission intensity is set to fall in a predetermined range defined beforehand.

7. A sputtering method according to Claim 6, wherein if the target value deviates from said predetermined range, sputtering is stopped.

8. A sputtering apparatus comprising a film forming container, a substrate feeding mechanism, and an emission intensity monitor, the apparatus further comprising:

a film thickness measuring device for measuring a thickness of a film formed on a substrate and outputting a measured result; and

a comparator for comparing an output of said film thickness measuring device with a preset value of the film thickness and outputting a target value of said emission intensity monitor in accordance with a compared result.

9. A sputtering apparatus according to Claim 8, further comprising a gas flow rate control mechanism for

receiving the target value of said emission intensity monitor and controlling a flow rate of at least one of gases introduced to said film forming container in accordance with the target value.

Sub A27 Cont'd